

The following is claimed:

- 1 1. A method for directing a data message in a communications network, including
2 a first wireless system and a second wireless system, the method comprising:
3 transferring service from the first wireless system to the second wireless
4 system, if a measured signal parameter meets or exceeds a target value;
5 updating a central database of user profiles in response to said
6 transferring; and
7 directing a data message for a mobile station through the second wireless
8 system, as facilitated by the central database, to deliver the data message to the
9 mobile station during its operation on the second wireless system.
- 1 2. The method according to claim 1 further comprising the steps of:
2 scanning for forward channels of a first wireless system and a second
3 wireless system;
4 measuring a received signal parameter of at least one of the scanned
5 forward channels to provide the measured signal parameter.
- 1 3. The method according to claim 1 further including the step of:
2 requesting the forwarding of the data message by sending a flag from a
3 mobile station to the central database for storage in the central database.
- 1 4. The method according to claim 1 further comprising the step of:
2 authenticating a mobile station transferring from the first wireless system to
3 the second wireless system.
- 1 5. The method according to claim 1 further comprising the step of:
2 sending to the central database a signaling message containing a mobile
3 identifier, a mobile switching center identifier, and a cell identifier during or after
4 transferring to the first wireless system.

- 1 6. The method according to claim 1 further comprising the step of:
2 sending to the central database a signaling message containing a mobile
3 identifier, a private branch exchange identifier, and a private system identifier
4 during or after the mobile station's transferring to the second wireless system.
- 1 7. The method according to claim 1 further comprising the step of:
2 updating a user profile in a home location register for the first wireless
3 system based on the user profile in the central database.
- 1 8. The method according to claim 1 further comprising the step of:
2 assigning a private identifier number for the second wireless system based
3 on a geographic location of a private wireless system as the second wireless
4 system.
- 1 9. The method according to claim 1 further comprising the step of:
2 assigning a private identifier number for a corresponding second wireless
3 system based on geographic coordinates of a mobile station within the second
4 wireless system.
- 1 10. The method according to claim 1 wherein the updating step further comprises
2 maintaining a central database of user profiles in a service control point.
- 1 11. The method according to claim 1 wherein the transferring step comprises
2 transferring service from a public wireless system as the first wireless system to a
3 private wireless system as the second wireless system.
- 1 12. The method according to claim 1 further comprising the steps of:
2 transferring service from a private wireless system as the first wireless
3 system to a public wireless system as the second wireless system, if the
4 measured signal parameter meets or exceeds the target value.

1 13. A system for directing a data message in a hybrid communications network,
2 including a private wireless system and a public wireless system, the system
3 comprising:
4 a mobile switching center for transferring service between the public
5 wireless system to the private wireless system, if a measured signal parameter
6 meets or exceeds a private target value;
7 a central database of user profiles updated in response to said transferring;
8 and
9 a service node for directing a data message for a mobile station through
10 the private wireless system, as facilitated by the central database, to deliver the
11 data message to the mobile station during its operation on the private wireless
12 system.

1 14. The system according to claim 13 further comprising:
2 a mobile station for scanning for control channels of a public wireless
3 system and a private wireless system, the mobile station including a measurer for
4 measuring the measured signal parameter of at least one of the scanned control
5 channels.

1 15. The system according to claim 13 further comprising an authenticator
2 associated with the private wireless system for authenticating a mobile station
3 transferring from the public wireless system to the private wireless system.

1 16. The system according to claim 13 wherein the central database is adapted to
2 receive and store a signaling message containing a mobile switching center
3 identifier, a cell identifier, and a private system identifier.

- 1 17. The system according to claim 13 wherein the private wireless system
2 includes a private branch exchange for assigning a private identifier number for
3 the private wireless system based on a geographic location of the private wireless
4 system.
- 1 18. The system according to claim 13 wherein the private wireless system
2 includes a base station controller for assigning a private identifier number for the
3 private wireless system based on a geographic location of the private wireless
4 system.
- 1 19. The system according to claim 13 further comprising a service control point for
2 maintaining user profiles stored in the central database.
- 1 20. A system for directing a data message in a hybrid communications network,
2 including a private wireless system and a public wireless system, the system
3 comprising:
4 a private branch exchange for transferring service between the public
5 wireless system to the private wireless system, if a measured signal parameter
6 meets or exceeds a public target value;
7 a central database of user profiles updated in response to said transferring;
8 and
9 a service node for directing a data message for a mobile station through
10 the private wireless system, as facilitated by the central database, to deliver the
11 data message to the mobile station during its operation on the public wireless
12 system.

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1 21. The system according to claim 20 further comprising:

2 a mobile station for scanning for control channels of a public wireless
3 system and a private wireless system, the mobile station including a measurer for
4 measuring a received signal parameter of at least one of the scanned control
5 channels.

1 22. The system according to claim 20 further comprising an authentication center
2 associated with the public wireless system for authenticating a mobile station
3 transferring from the private wireless system to the public wireless system.

1 23. The system according to claim 20 wherein the central database is adapted to
2 receive and store a signaling message containing a mobile switching center
3 identifier, a cell identifier, and a private system identifier.

1 24. The system according to claim 20 further comprising a service control point for
2 maintaining user profiles stored in the central database

1 25. A method for reducing inter-system signaling between wireless
2 communication systems; the method comprising:

3 roaming from a first coverage area of a first wireless system to a second
4 coverage area of a second wireless system;

5 updating a first home location register of the first wireless system with a
6 location update message and an active address of the second wireless data
7 server from a second visitor location register of the second wireless data network;

8 transferring a mobile data profile of the mobile station from a first wireless
9 data server to a second wireless data server in response to the location update
10 message;

11 serving a visiting mobile station in the second wireless coverage area via
12 the second wireless data server, as opposed to a first wireless data server of the

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13 first coverage area, to reduce inter-system signaling messages sent between the
14 first wireless system and the second wireless system.

1 26. The method according to claim 25 further comprising the steps of:
2 allocating memory in the second wireless data server for storing the mobile
3 data profile.

1 27. The method according to claim 25 wherein the transferring step further
2 comprises the step of:
3 transferring a mobile data profile of the mobile station from the first wireless
4 data server to the second wireless data server via a first mobile switching center,
5 a public switched telephone network, and a second mobile switching center.

1 28. The method according to claim 25 wherein the transferring step further
2 comprises the steps of transferring a mobile data profile from a first wireless data
3 server to a second wireless data server over a communications network.

1 29. The method according to claim 28 wherein the transferring step is
2 accomplished by transmission over the internet as the communications network.

1 30. The method according to claim 25 further comprising the step of:
2 adding a field to a database in first home location register and the second
3 visitor location register to support storage of the active address.

1 31. The method according to claim 25 further comprising the step of:
2 appending the active address to a location update message transmitted
3 from the first home location register to the second visitor location register.

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